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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,720	10/22/2003	Nathan Bluzer	1215-0495P (000402-078)	3976
2292	7590	11/22/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			GAGLIARDI, ALBERT J	
			ART UNIT	PAPER NUMBER
			2884	

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/689,720	Applicant(s) BLUZER, NATHAN	
	Examiner Albert J. Gagliardi	Art Unit 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-22 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/03/1/05</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1 and 15 are objected to because of the following informalities:

Regarding claim 1, the expression “equality” in the next to last line of claim 1 should probably be --equalize--.

Regarding claim 15, the claim should end with a “period”.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 14 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6 (dependent on claim 4), claim 6 recites the limitation “said predetermined region”. There is insufficient antecedent basis for this limitation in the claim. The examiner notes that a limitation of a predetermined region is first recited in claim 5.

Regarding claim 14 (dependent on claim 12), claim 14 recites “the first and second diodes.” There is insufficient antecedent basis for this limitation in the claim. The examiner notes that a limitation of a first and second diodes is first recited in claim 13.

Regarding claim 20 (dependent on claim 18), claim 20 recites the limitation “said predetermined region”. There is insufficient antecedent basis for this limitation in the claim. The examiner notes that a limitation of a predetermined region is first recited in claim 19.

***Claim Rejections - 35 USC § 103***

3. Claims 1-11 and 13-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bluzer (US 2002/0117622).

Regarding claim 1, *Bluzer* discloses (Figs. 4-6) an electromagnetic radiation sensor assembly comprising: a heat bath (14); an antenna element (30) for receiving radiant electromagnetic energy; a thermally responsive absorber element (10) coupled to the antenna element (30) and including means for absorbing and detecting radiant electromagnetic energy received by said antenna element (0092); an intermediate stage (16) for thermally isolating the absorber element from the heat bath (14), said intermediate stage including a first (32) and a second (28) thermal isolation member each having a predetermined thermal conductance interconnecting the absorber element (10) to the intermediate stage (16) and the intermediate stage to the heat bath (14), the first thermal isolation member (32) being located between the absorber element (10) and the intermediate stage (16) and the second thermal isolation member (28) being located between the intermediate stage (16) and the heat bath (14); an electro-thermal feedback circuit (§ 0096) incorporated into the intermediate stage (16) for reducing the thermal conductivity between the absorber element (10) and the heat bath (14) by causing the temperature of the intermediate stage to converge to the temperature of the absorber element when detecting electromagnetic radiation, thus effectively causing the thermal conductance of the first thermal isolation member to attain a minimum conductance value and thereby improve the sensitivity of the radiation sensor towards the radiation limit (§ 0012; 0096); and wherein the electro-thermal feedback circuit includes a heat generating amplifier (18) integrated with the intermediate stage and means for detecting the temperature difference (34, 40) between the

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absorber element (10) and the intermediate stage (16) and generating an output voltage signal dependent on the received electromagnetic radiation to control the power generated by the amplifier (§ 0097), wherein the heat generated by the transistor included in the amplifier itself directly heats the intermediate stage in response to said temperature difference signal so as to equalize the temperature between the absorber element and the intermediate stage (§ 0096).

Regarding the amplifier including a bipolar transistor, it is noted that while *Bluzer* does not specifically identify the transistor in the amplifier as being a bipolar transistor, those skilled in the art appreciate that functionally equivalent transistors such as bipolar transistors or MOSFET transistors are widely known in the art for use in amplifier circuits and, absent some degree of criticality, the use of a bipolar transistor would have been an obvious design choice in view of the well known use thereof in amplifiers.

Regarding claim 2, *Bluzer* discloses (Fig 6) that the sensor assembly comprises a two-tier device and wherein said antenna element (30), said absorber element (10) and said intermediate stage (16) comprise substantially co-planar elements located above the heat bath (14).

Regarding claim 3, *Bluzer* discloses (Fig. 6) that the antenna element (30) is located on an upper outer surface of said heat bath (16).

Regarding claim 4, *Bluzer* discloses that the assembly comprises an x-y sensor assembly including x-y address readout circuits, and wherein said heat bath, said antenna element, said absorber element and said intermediate stage form a single pixel (§ 0108).

Regarding claim 5, *Bluzer* discloses that the spectral response of at least one of the elements including said absorber element and said antenna element is adjusted to operate in a

predetermined region of the electromagnetic spectrum, including at least the infrared region of the electromagnetic spectrum (§ 0180).

Regarding claim 6, *Bluzer* discloses that the predetermined region also includes millimeter wave region of the electromagnetic spectrum (§ 0180).

Regarding claim 7, *Bluzer* discloses that the absorber element comprises a bolometer (§ 0002).

Regarding claim 8, *Bluzer* discloses that the absorber element includes resistor means and temperature sensor means, wherein said resistor means is ac coupled to the antenna to receive and absorb the electromagnetic energy, and said temperature sensor means is thermally coupled to the resistor means to monitor its temperature (§ 0093).

Regarding claim 9, *Bluzer* discloses that the pixel is fabricated in silicon (§ 0091).

Regarding claim 10, *Bluzer* discloses that the plurality of pixels are included in an array of pixels (§ 0108).

Regarding claim 11, *Bluzer* discloses (Fig. 6) that the intermediate stage (16) includes a support member (28) and, wherein said support member and said isolation members (32) form a bridge for positioning the absorber element (10) above the means providing a heat bath.

Regarding claims 13 and 14, *Bluzer* discloses (Fig. 9) that the amplifier comprises a differential amplifier (18) and the means for detecting the temperature includes first and second diodes for respectively sensing the temperature difference between said absorber element and said intermediate stage and wherein the first and second diodes are connected in back-to-back circuit relationship to and to the amplifier inputs (§ 0097-0098).

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Regarding claim 15, *Bluzer* discloses that the intermediate stage (16) includes a centralized opening therein and wherein said absorber element (10) is located in said opening.

Regarding claims 16, 17, 18, and 19-20, the radiation detection assembly as recited according to the claims is suggested by the radiation assembly suggested by *Bluzer* as applied to claims 1 and 10, 2, 7, and 5-6 respectively above, and is rejected accordingly.

Regarding claims 21-22, the radiation detection assembly as recited according to the claims is suggested by the radiation assembly suggested by *Bluzer* as applied to claims 1-2 above, and is rejected accordingly.

***Allowable Subject Matter***

4. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

Regarding dependent claim 12, the prior art (*Bluzer*) does not disclose or fairly suggest the specific arrangement wherein the heat bath is formed of a substrate and an upper body portion including a cavity on which the antenna is mounted.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

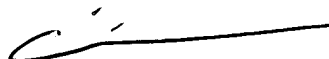
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436.

The examiner can normally be reached on Monday thru Friday from 10 AM to 6 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Albert J. Gagliardi  
Primary Examiner  
Art Unit 2884

AJG